

Remarks

Applicants have carefully reviewed the office action and address all the rejections in this response. Applicants respectfully traverse the rejections of the independent claims based on what the Office Action termed as "Applicant's Stated Own Prior Art" (ASOPA) for the reasons given below.

Objection to the Specification

The abstract is amended to address the objections of the Examiner. In particular, the word "comprising" is stricken and the word --including-- is inserted in its place. Likewise, the word "said" is replaced with --the--.

Applicants also amended the specification by inserting the heading "Summary" at line 30 on page 4 as indicated.

These changes do not introduce new matter. Examiner is respectfully requested to review and enter these amendments.

Claim Amendments

Claims 2, 4 and 13 are amended to correct certain typographical errors. Claim 2 is amended to replace the word "pat" with --path-- as the Office Action suggested. Claim 4 has a parenthesis that was stricken, and a similar change is made to claim 13. In addition, in claim 1, an extra preposition "of" has been deleted as being unnecessary.

None of these changes introduces new matter. The Examiner is respectfully requested to review and enter the changes.

Objection to the Drawings – Summation Unit

The Office Action objected to the drawings under 37 C.F.R. § 1.83(a) stating that the feature "summation unit" mentioned in claim 13 was not present in the claims. Applicants respectfully traverse this objection because the summation unit 37, *see* page 16, line 28, is shown in FIG. 16.

The Office Action also objected to the drawings, FIGs. 2, 3 and 7 as not being labeled as --PRIOR ART-- under M.P.E.P. § 608.02(g). Appropriate drawing changes are enclosed with this response.

Claim Rejections under 35 U.S.C. § 112, ¶ 2

The Office Action rejected claims 1-24 under 35 U.S.C. § 112, ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

In particular, the Office Action stated that independent claim 1 did not connect the element "summation unit" to any of the preceding claim elements, such as for example, to the element "timing error detector" in claim 1.

Likewise, the Office Action rejected claim 13 stating that the claimed step "generating summation signal" was not connected to the steps "detecting an error" and "generating timing error."

Claims 2 and 14 are rejected in the Office Action in view that the claimed "plurality of correlator" was not "clearly recited as belonging to each of the fingers for correlating the received early and late signals at each finger. See correlator in finger 12 in figure 4." See Office Action at page 4, ¶ 8.

The Office Action also rejected the dependent claims 3-12 and 15-24 as being dependent on rejected base claims, claims 1 and 13. The rejected claims 1, 2 and 13, 14 are amended in this response as follows.

1. (currently amended) Rake receiver for spread spectrum signals comprising

a plurality of rake fingers each rake finger being adapted to receive a signal being part of a multipath signal and associated with a path of the multipath, said signal having a delay relative to an other signal associated with an other path of the multipath signal,

a summation unit communicatively coupled to said plurality of rake fingers for generating a summation signal based on the signals received from ~~of~~ at least some of the rake fingers, said summation signal having an improved signal to noise ratio (SNR) if compared with the signal to noise ratio (SNR) of at least one of the rake fingers,

a timing error detector coupled to each rake finger for detecting an error of a delay (τ) of the signal of a rake finger and for generating a timing error signal which is sent to a unit for compensating the error of the respective delay (τ), and is based on the signals associated with paths of the multipath signal of more than one rake finger.

2. (currently amended) Rake receiver for spread spectrum signals of claim 1, wherein unit for compensating the error of the respective delay (τ) feeds signals to a detection path and to a synchronization ~~pat~~ path of each of the rake fingers, the synchronization path comprises a plurality of correlators in each of the rake fingers for a correlation of early and late signals received at each of the rake fingers, the signals being early or late with respect to signals on the detection path.

13. (currently amended) Method for signal processing in a rake receiver for multipath spread spectrum signals wherein the rake receiver comprises a plurality of rake fingers each rake finger being adapted to receive a signal being part of a multipath signal, comprising the steps of

associating rake fingers with a signal of a path of the multipath signal, the signal of the associated path having a delay (τ) relative to an other signal of an other path of the multipath~~+~~ signal,

receiving signals from the plurality of rake fingers,

generating a summation signal based on the signals received from of at least two of the rake fingers, said summation signal having an improved signal to noise ratio (SNR) relative to the signal to noise ratio (SNR) of at least one of the rake fingers,

detecting an error of a delay (τ) of a signal received from ~~of~~ a rake finger,

generating a timing error signal which is sent to a unit for compensating the error of the respective delay (τ), the timing error signal being based on signals associated with paths of the multipath of more than one rake finger.

14. (currently amended) Method for signal processing in a rake receiver for spread spectrum signals according to claim 13, wherein the unit for compensating the error of the respective delay (τ) feeds signals to a detection path and to a synchronization path of each of the rake fingers, and the synchronization path comprises a plurality of correlators in each of the rake fingers for a correlation of early and late signals at each of the rake fingers, the signals being early or late with respect to signals on the detection path.

In view of the changes as presented, the rejections are overcome. No new matter is added as a result of the changes. Examiner is requested to review and enter the amendments.

Rejection of claims 1 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Stated Own Prior Art (ASOPA)

Examiner rejected claims 1 and 13 as being unpatentable by the prior art disclosed in the instant application under 35 U.S.C. § 103(a). Applicants address and traverse the rejections with respect to independent claims 1 and 13. Because the independent claims are believed to be patentable, the dependent claims, which depend on the independent claims, are also believed to be patentable.

With respect to both the rejected claims 1 and 13, the Office Action states that the summation unit is not disclosed in the ASOPA, but that the Examiner took official notice of the fact that such units were "known in spread spectrum communication system for

coherently and non-coherently adding the signals to increase the signal-to-noise ratio of the received signals * * *."

First, Applicants respectfully request the Examiner to show the basis of taking such official notice. M.P.E.P. § 2144.03; *See In re Ahlert*, 424 F.2d 1088, 1091, 165 U.S.P.Q. 418, 420-421 (CCPA 1970) ("[Assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference work" and "allegations concerning specific 'knowledge' of the prior art, which might be peculiar to a particular art should also be supported.")

Second, Applicants disagree with the characterization of the claims as provided in the Office Action. For example, Claim 1 (as amended) recites, at relevant part:

a summation unit communicatively coupled to said plurality of rake fingers for generating a summation signal based on the signals received from at least some of the rake fingers, said summation signal having an improved signal to noise ratio (SNR) if compared with the signal to noise ratio (SNR) of at least one of the rake fingers,

The feature as recited in the claim is not simply that there was a summation unit, as the Office Action appears to indicate. Instead, the summation unit as recited in the claim 1 generates a summation signal based on the signals received from at least some of the rake fingers (and in the case of claim 13, from at least two rake fingers), further characterized in that the summation signal has "an improved [SNR] if compared with the [SNR] of at least one of the rake fingers." Applicants respectfully submit that these features are not present in the prior art, and for that reason, Applicants request reconsideration and withdrawal of the rejection.

As stated earlier, in view that the independent claims 1 and 13 are believed to be patentable, the dependent claims 2-12 and 14-24, which depend on these independent claims are also believed to be patentable. Applicants request the Examiner to reconsider.

Conclusion

In view of the foregoing amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejections and issue an early notice of allowance. No fee is due with this response.

Respectfully submitted,



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